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ABSTRACT

This is the third and final evaluation of three French-language educational programs presently being offered to English-speaking children enrolled in the elementary schools of the South Shore Protestant Regional School Board in Quebec. The three programs under study are: (1) a French-as-a-second-language (FSL) alternative, taught for one period each day in an otherwise conventional English program where English is used as the sole language of instruction; (2) a Grade 4 French immersion program in which a pupil follows the traditional English curriculum from Kindergarten to Grade 3, but as of Grade 4 is introduced to French as the sole language of instruction for the year; and (3) an early bilingual program where French is used as the sole language of instruction from Kindergarten through Grade 2 and with both English and French used as separate languages of instruction for different school subjects from Grades 3 through 6. (Author/CLK)

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A COMPARISON OF THREE ELEMENTARY SCHOOL ALTERNATIVES FOR LEARNING FRENCH: CHILDREN AT GRADES FIVE AND SIX[1]

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This is the third and final evaluation of three French-language educational programs presently being offered to English-speaking children enrolled in the elementary schools of the South Shore Protestant Regional School Board. The three programs under study are: (a) a French-as-a-second-language (FSL) alternative, taught for one period each day in an otherwise conventional English program where English is used as the sole language of instruction, (b) a Grade 4 French immersion program in which a pupil follows the traditional English curriculum from Kindergarten to Grade 3, but as of Grade 4 is introduced to French as the sole language of instruction for the year, and (c) an early bilingual program where French is used as the sole language of instruction from Kindergarten through Grade 2 and with both English and French used as separate languages of instruction for different school subjects from Grades 3 through 6.

December, 1977

The first evaluation (Cziko, 1975) focused on the effects of the early bilingual and Grade 4 French immersion programs on the language and academic skills of pupils completing Grade 4. It was found the the exclusive use of French as the language of instruction during Grade 4 had no measurable detrimental effects on the development of the native language skills, the academic achievement, or the measured intelligence of the pupils participating in the Grade 4 immersion program. Although these pupils did not perform as well as the early bilingual pupils on most French-language measures, there was nevertheless some evidence that their one year of French immersion had had a positive effect on their acquisition of French-language skills, especially their reading ability. Pupils in the early bilingual program demonstrated an impressive proficiency in French and again the program had no measurable detrimental effects on the development of their native language skills, academic achievement, or intelligence. It was also found that reading skills, originally developed through one language or the other, were transferable to the other language regardless of which language the pupils were first taught to read (Cziko, 1976).

The second (Cziko, Holobow & Lambert, 1977) was both a follow-up and extension of the first. In addition to re-evaluating the language skills and academic achievement of the same pupils at the end of Grade 5, new groups of pupils in the same programs were tested at the end of Grade 4 as a means of assess-

ing the reliability of the first evaluation. Furthermore, there were two major changes in the testing of these pupils. First, French language tests were administered to all groups including those in the FSL program, permitting us to guage the French-language skills of pupils in the more traditional FSL program, and to better document the effects of the Grade 4 immersion program on the development of French-language skills. Second, a questionnaire designed to measure attitudes toward selected ethnolinguistic groups was administered to all groups to investigate the affective consequences of the three programs under study. The results of this second evaluation generally replicated those of the previous year. Neither the early bilingual nor the Grade 4 French immersion program was found to have any lasting detrimental effects on the development of English native-language skills. This was true both to the pilot group at the end of Grade 5 and the follow-up group at the end of Grade 4. The Grade 4 immersion program was also found to be effective in significantly improving the French-language skills of the pupils in this program and this higher level of language competence was maintained throughout Grade 5, despite the fact that English had been re-introduced as the language of instruction and French-language instruction had been maintained at a much reduced level. The Grade 4 immersion program, however, was in general not as effective as the early bilingual program in fostering French-language competence. There was also evidence to suggest that both the early bilingual and

Grade 4 immersion programd had had a positive effect on those children's attitudes toward French Canadians.

For the present report the same pilot and follow-up groups, now at the end of Grades 6 and 5, respectively, were administered tests of nonverbal intelligence, French-language skills, and the same attitude questionnaire used last year. Several of the same French-language tests that had been administered to the pilot and follow-up groups at Grade 4 were given again so that we could better compare the development of French-language skills of children in the three programs over a period of one (for the follow-up groups) or two years (for the pilot group). We did not, however, administer tests of English-language skills or academic achievement since results of the previous two years had clearly indicated that neither the early bilingual nor the Grade 4 immersion program had any long-term adverse effects on the native-language development or academic achievement of children in these programs.

Method

Subjects

The performance of eight groups of pupils was evaluated. The majority of pupils within each group had also been included in one or both of the previous evaluations (Cziko, 1975; Cziko, Holobow, & Lambert, 1977). Table 1 provides an outline of the amount of French-language instruction provided for each group. In addition, a more detailed description of the eight groups is provided below.

Insert Table 1 about here

Grade 5 English Controls (5E). This group comprised 22 English-speaking children who had followed the conventional English-language curriculum since Kindergarten or Grade 1. All school subjects were taught in English with the exception of one daily 40 to 50 minute class of French-as-a-second-language (FSL). Fifteen children in this group had been included in last year's evaluation at the end of Grade 4.

Grade 5 Immersion (5I). The 41 English-speaking children included in this group had followed the conventional English-language program from Grades 1 through 3. This program included approximately 40 to 50 minutes of FSL instruction per day. At Grade 4, however, the children entered a one-year French immersion program in which all school subjects were taught in French except for one daily 35 minute class of English Language Arts. This program was established to give intensive training in French to pupils who had not taken part in an early immersion program. At Grade 5, these children again followed a conventional English-language curriculum, but in addition to the daily class of advanced FSL instruction, they received instruction in either mathematics or science, in French. Seventeen children from this group had been tested in last year's evaluation. The remaining 24 pupils had also taken the one-year Grade 4 immersion program, which had been introduced into another school in the academic year 1975-1976.

Grade 5 Bilinguals (5B). This group comprised 36 English-speaking children who had followed the early bilingual program since Kindergarten or Grade 1. In these grades, French was used as the sole language of instruction. At grade 2, one 60 minute daily class of English Language Arts was introduced. This had increased to 70 minutes per day at Grade 3, and 85 minutes at Grade 4. At Grade 5, French Language Arts and mathematics were both taught in French with English as the language of instruction for all other school subjects. Of this group, 19 had been included in last year's evaluation.

Grade 5 French Controls (5F). The 34 French-speaking children included in this group had followed a conventional French-language curriculum except for approximately 30 minutes of English-as-a-second-language (ESL) instruction per day from Grades 1 through 4 and 45 minutes of ESL instruction per day at Grade 5. Twenty-five children of this group had been tested at Grade 4.

Grade 6 English Controls (6E). This group comprised 24 English-speaking children who had followed a conventional English-language curriculum with 30 to 45 minutes of FSL instruction per day from Grades 1 through 6. Ten children of this group had been tested in the first evaluation at the end of Grade 4.

Grade 6 Immersion (6I). The 13 children of this group, like their 51 counterparts, had participated in the one-year immersion program at Grade 4. At Grade 5, English was used as

the language of instruction for all subjects except for approximately 40 minutes of advanced FSL instruction per day and 50 minutes per day of mathematics instruction given in French. At Grade 6 these children followed a conventional English-language curriculum with French instruction limited to 30 to 45 minutes of FSL instruction per day. All 13 students had been included in the two previous evaluations.

Grade 6 Bilinguals (6B). The 33 English-speaking pupils of this group had followed the early bilingual program with French used as the sole language of instruction in Kindergarten and Grade 1. At Grade 2, English Language Arts were introduced as a 60 minute daily class which increased to 70 and 85 minutes at Grades 3 and 4, respectively. At Grades 5 and 6, English was used as the language of instruction for all school subjects except for approximately 50 minutes per day of FSL and 50 minutes of mathematics instruction per day given in French. This was the third time 26 students of this group had been evaluated.

Grade 6 French Controls (6F). This group included 38 French-speaking children,13 of whom had been tested two years previously. Like the pupils of Group 5F, these children had received all of their schooling in French, with the exception of one daily class of ESL instruction from Grades 1 through 6.

Materials

A battery of group and individual tests designed to measure nonverbal intelligence, French-langauge skills,and attitudes toward selected ethnolinguistic groups was administered to the pupils in May, 1977.

Nonverbal Intelligence. Sets B, C, and D of Raven's Progressive Matrices (Raven, 1958) were administered to all eight groups of pupils. This test is designed to measure nonverbal intelligence and except for simple instructions given by the tester does not involve the use of language. Each pupil was given a question booklet and an answer sheet and given 30 minutes to complete the 36 items of the three sets. The number of correct responses out of 36 made up each pupil's score.

French Vocabulary. The synonym subtests of both the Grade 5 and Grade 6 Test de Lecture "California" were administered to all groups. For this multiple-choice test of 50 items, five choices each, the pupils were instructed to select the word from among the five alternatives presented the one that was closest in meaning to the first word. Each pupil's score was the number of correct responses out of 50.

French Reading Comprehension. The Grades 5 and 6 pupils were administered the same reading comprehension test that they had written the previous year when they were in Grades 4 and 5, respectively. This test was adapted from a paragraph comprehension test originally developed for Grade 7 FSL students by

Gardner, Smythe, Kirby, and Bramwell (1974). The test consists of five short passages each followed by three or four multiple-choice questions. Groups 5E, 5I, and 5B were presented with English questions and answers to the French texts; Groups 5F, 6E, 6I, 6B, and 6F answered the same questions translated into French. Pupils were given 30 minutes to complete the 17 multiple-choice questions. Each pupil's score was the number of correct responses out of 17.

French Cloze Test. Two short three-paragraph stories taken from French fourth-grade readers were the basis for the cloze test administered to the Grade 5 pupils. This was the same test they had written the previous year. The first sentence of each story was left intact; thereafter, every fifth word was deleted and replaced by a blank of uniform length. The pupils were instructed to first read through the entire story and then to fill in each blank with what they thought was the best possible single word. After completing a short example paragraph with the test, pupils were given 30 minutes to complete the test. One point was given for each contextually appropriate word filled-in. The maximum possible score for the two stories combined was 32.

The Grade 6 pupils were given the same cloze test they had written two years earlier at Grade 4. This test consisted of a short three-paragraph story adapted from the book Jerome (Phillips, 1965) and translated into French. The first sentence was left intact; thereafter, every seventh word was deleted and

replaced by a blank of uniform length. Before being given this version of the cloze test, however, all Grade 6 pupils first received a scrambled version of the same test in which the sentences of the story (including blanks) were arranged in a scrambled order as described by Chihara, Oller, Weaver, and Chavez-Oller (1977). This was done to create a cloze test for which the pupils would not be able to use knowledge of the story's context (i.e., discourse constraints) to fill in the blanks. The extent to which a pupil scored higher on the normal compared to the scrambled version of the cloze test was taken as a measure of the pupils' sensitivity to discourse constraints while reading French. Although the administration of these tests was the same as for the Grade 5 test, the exact-word criterion was used to score the cloze tests of the Grade 6 pupils.

French Listening Comprehension. Pupils in Grades 5 and 6 were administered the same listening comprehension test given to them in 1976 (for the Grade 5 pupils) and 1975 (for the Grade 6 pupils). This test was developed by the Research Group of the Instructional Services Department of the Protestant School Board of Greater Montreal. A tape recording entitled "L'histoire de la Petite Caroline" was played to the children. The story was told once in its entirety, and was then repeated in short segments, each of which was followed by one or two multiple-choice questions. Each pupil's score consisted of the number of correct responses out of 17.

French Writing Skills. The pupils were shown a silent three minute film loop twice, and were asked to write a short composition in French describing what they had seen. The compositions of all pupils in the same year (including the French Controls) were put in random order and given to an experienced French teacher to be objectively and subjectively evaluated in terms of form and context. The objective evaluation of form involved tabulating the total number of grammar, syntax, punctuation, and spelling errors and then dividing each by the total number of words in the composition. An arcsin transformation was perfomred on these scores to normalize their distribution. The number of events included in each composition comprised the score for the objective evaluation of content. A nine-point rating scale ranging from one (nul ou mal) to nine (très bon) was used to subjectively evaluate the compositions again according to both form and content.

French Speaking Skills. Only those children from whom we had collected similar data in the previous two years were interviewed. Speech samples were obtained by presenting pupils with a "make believe" situation which required communicating in French. Each child was interviewed individually and was told to imagine that he or she was a salesperon who needed to sell an item (such as a book, a plant, or another familiar object) for not less than five dollars. The interviewer played the role of a reluctant customer and began by offering to buy the item for a much lower

price. The child had to convince the interviewer that the item was actually worth five dollars. The interviews were tape-recorded, and generally lasted between 2 and 5 minutes. The recordings were then randomly presented to two French-speaking university graduates who independently rated each speaker on scales of pronunciation, grammar, vocabulary, ability to communicate, and comprehension (i.e., how well the pupil understood the interviewer). Each scale ranged from one (nul ou mal) to nine (très bon).

Attitudes Toward Various Ethnolinguistic Groups. A questionnaire consisting of 13 bipolar, seven-point rating scales was used to assess each child's self-view and his attitudes toward three groups of people: English Canadians, French Canadians, and European French, (see Lambert, Tucker & d'Anglejan, 1973). The questionnaires were administered to the children of all eight groups, each group rating his own ethnolinguistic group first. The English-speaking children (Groups 5E, 5I, 5B, 6E, 6I, and 6B) were administered the English version of the questionnaire while the French controls (Groups 5F and 6F) completed a French version of the same questionnaire.

Statistical Procedures

For each grade level, separate one-way analyses of variance were performed on all measures of intelligence and French-language skills with group (English control, Grade 4 immersion, early bilingual, and French control) as the independent variable. In

cases where there were significant group effects, multiple t-tests were computed comparing the performance of Groups 5F with Group 5B, Group 5B with 5I, and for those tests adminsitered to Group 5E as well, Group 5I with Group 5E. Analogous t-test comparisons were made for the Grade 6 groups. Although these comparisons were not statistically independent, it was thought that these a priori comparisons were appropriate, since results of the two previous evaluations showed that in general the French controls performed best on tests of French-language skills followed in order by the early bilingual groups, the Grade 4 immersion groups, and the English controls. A two-way analysis of variance was performed on the cloze test scores of the Grade 6 pupils. In this case, with group and cloze test (normal and scrambled version) as the independent variables with repeated measures on cloze test.

One of the objectives of this evaluation was to document the development of French-language skills of the pilot and follow-up groups over a two and one-year period,respectively. We were particularly interested in examining the performance of the pilot and follow-up Grade 4 immersion groups to see if these pupils had retained the French-language skills they had acquired during their one year of French immersion. For this purpose the French reading comprehension, cloze, and listening comprehension tests administered this year were the same tests administered to the pilot group two years previously and to the follow-up group one

year perviously. A two-way analysis of variance was performed on each test for the pilot and follow-up groups separately, with group (English control, Grade 4 immersion, early bilingual, and French control) and year of adminstration (1975 and 1977 for the pilot groups; 1976 and 1977 for the follow-up groups) as independent variables with repeated measures on year of administration taken into consideration. Thus, only those pupils who had written a test on the two occasions were included in the analysis of that test. Accordingly, the means from these analyses, with reduced sample sizes, are not necessarily the same as corresponding means from the previously described one-way analyses of variance.

To analyze the results of the attitude questionnaire, a four by four analysis variance was carried out for each of the 13 traits, with the concept being rated (i.e., myself, English Canadians, French Canadians, and European French) and the groups making the ratings(i.e., 5E, 5I, 5B, and 5F or at the Grade 6 level, Groups 6E, 6I, 6B, and 6F) as the independent variables. In those cases where a significant interaction was found, the differences among all 16 means were tested using the Newman-Keuls procedure. To ensure that the responses of the French control groups would be representative of French-speaking Quebeckers, questionnaires completed by pupils whose parents were born outside of the Province of Quebec were not included in this analysis.

Results and Discussion: Grade 5 Pupils

A summary of all test results of the Grade 5 pupils is presented in Table 2 and it is this table we draw on for the following summary and discussion of results.

Insert Table 2 about here

Intelligence

No significant group effect was found for the measure of nonverbal intelligence (Raven's Standard Progressive Matrices). As in the two previous evaluations we have found no evidence to suggest that either the early bilingual or Grade 4 French immersion program has any adverse or enhancing effects on the intelligence of pupils enrolled in these programs. Furthermore, the French and English control pupils appear as a group to be as intelligent as the English-speaking pupils in the early bilingual and Grade 4 immersion programs making them in this respect appropriate controls.

French Language Skills

Significant group effects were found for all 13 measures of French-language skills. In addition, all significant group differences found, using multiple t-tests, were in the predicted direction, i.e., Group 5F performed better than 5B, Group 5B better than 5I, or 5I better than 5E. However, the only measure on which all three of the above predicted group differences were

found was the objective measure of French writing form. For most of the tests (vocabulary, cloze, listening comprehension, writing form and content ratings, and the comprehension, pronunciation, grammar and vocabulary ratings of French speaking skills), Group 5E performed better than 5B, and Group 5B better than 5I, but Group 5I did not perform better than Group 5E. On the test of French reading comprehension the predicted differences were found among Groups 5E, 5I, and 5B, but Group 5F did not score significantly higher than Group 5B on this test. For the objective measure of French writing content there were no significant differences among Groups 5E, 5I, and 5B, although Group 5F performed significantly better than the three groups of English-speaking pupils on this measure. Finally, on the rating of French communication skills, Groups 5F and 5B were rated significantly higher than Groups 5E and 5I, with no significant difference between Groups 5F and 5B nor between Groups 5E and 5I.

In comparing these results to those of last year's evaluation, we find that this year's follow-up Group 5B scored significantly lower than the French controls on almost all measures of French language skills, as was the case with the pilot Group 5B of last year. However, this year's Group 5I was not rated significantly higher than the English controls on any of the five ratings of French speaking skills whereas last year's Group 5I did score higher than the English control. Furthermore, this year's Group 5I was rated significantly lower than Group 5B on

all measures except the rating of French communication skills whereas last year's Group 5I performed as well as the early bilingual pilot group on all ratings of French speaking skills. In other words, this year's evaluation of the follow-up groups shows a clearer step-wise separation of Groups 5B from 5I with 5I not much different from 5E.

It is also informative to compare the results of the follow-up groups from this year's evaluation at the end of Grade 5 with their performance last year at the end of Grade 4. When this comparison is made for the early bilingual follow-up group, we see little change from one year to the next in this group's performance on measures of French-language skills in relation to the performance of the Grade 4 immersion and French control groups. That is, the early bilingual follow-up group generally scored significantly higher than the Grade 4 immersion follow-up group but significantly lower than the French control follow-up group at the end of Grade 4 and Grade 5.

When this year-to-year comparison is made for the Grade 4 immersion follow-up group, however, some striking differences emerge. Although this group performed significantly better than the English controls last year on the French cloze test and all five ratings of French-speaking skills, there were no significant differences between these two groups this year on the sames measures of French-language skills. It appears, then, that although the Grade 4 immersion pilot group retained their edge in French

over its English control group until the end of Grade 5, the Grade 4 immersion follow-up group has failed to do so. Whether this is due to a weakness in French language skills on the part of the Grade 4 immersion follow-up group or to unusual strength in French language skills on the part of the English control follow-up group is impossible to determine from these results. The following developmental analyses, however, do suggest which of these two alternatives is more likely.

Developmental Analyses

The results of the developmental analyses of the follow-up groups performance on the French reading comprehension, cloze, and listening comprehension tests are summarized in Table 3. For the reading comprehension test, there were no significant group differences in 1976 or 1977. Groups 5B and 5F scored significantly higher in 1977 than in 1976; there was no significant differences between the 1976 and 1977 scores on this test for Group 5I. It appears, then, that all groups except Group 5I developed better French reading comprehension skills from the end of Grade 4 to the end of Grade 5.[2]

For the 1976 administration of the cloze test, t-test comparisons revealed that Group 5F scored significantly higher than Group 5B, Group 5B higher than 5I, and Group 5I higher than 5E. The same significant differences were found for the 1977 results with the exception that Group 5I did not score significantly higher than Group 5E. All groups, however, did score significantly higher in 1977 than in 1976 on this test.[3]

For the test of listening comprehension, an analysis of the 1976 results showed that Group 5I scored significantly higher than Group 5E and Group 5F higher than 5B with no significant difference between Groups 5I and 5B. Of the three comparisons made for the 1977 results, the only significant difference found was between Groups 5B and 5I with the former scoring higher than the latter. In addition, all groups except Group 5I scored significantly higher in 1977 than in 1976 on this test, indicating that as for French reading skills, all groups except Group 5I progressed in their acquisition of French listening comprehension skills from the end of Grade 4 to the end of Grade 5.[4]

Since all groups with the exception of Group 5I improved significantly from 1976 to 1977 on all three tests included in these developmental analyses, it appears that during Grade 5 the Grade 4 immersion follow-up group had failed to keep pace with the English control, early immersion, and French control follow-up groups in the development of French language skills.

Insert Table 3 about here

Attitudes Toward Various Ethnolinguistic Groups

The results for the measures of pupils' attitudes towards self, English Canadians, French Canadians, and European French are summarized in Table 4. The ratings of self indicated that all four groups have a common set of favorable views of

themselves. A significant difference was found for one trait only— the French controls rated themselves significantly less talkative than did each of the English-speaking groups.

The ratings of English Canadians show that the three English-speaking groups were significantly more favorable than the French controls on the traits of intelligence, strength, friendliness, good-looks, and calmness. In addition, Groups 5E and 5I saw English Canadians differently on the trait industrious, Group 5E seeing them as significantly less industrious. There were no significant group differences on the seven remaining traits.

There were, by way of contrast, many different views of French Canadians; there were significant differences for seven of the thirteen traits compared to one or more of the English-speaking groups, the French controls rated French Canadians significantly more intelligent, friendly, affectionate, kind, good-looking, and pleasant but less talkative. In addition, Group 5B had significantly more favorable views of French Canadians than did one or both of the other English-speaking groups on the traits of intelligence, friendliness, and pleasantness. Overall, Groups 5E and 5I seem to share common attitudes toward French Canadians and these are generally less favorable than those of the French controls and selectively less favorable than those of Group 5B. The ratings given by Group 5B are quite favorable; on 10 of the 13 traits Group 5B's ratings were not significantly different from those of the French controls.

Significant group differences were found on ten of the thirteen traits for pupils' views of European French people. he French controls rated European French people as significantly more intelligent, strong, friendly, affectionate, industrious, kind, happy, good-looking, and pleasant than did one or more of the three English-speaking groups,although the only significant difference between the French controls and Group 5B was on the trait "industrious-lazy". Significant differences among the three English-speaking groups were found on six traits. The English controls rated European French as less intelligent, affectionate, and industrious than did Group 5B and less happy, good-looking, and pleasant then did both Groups 5B and 5I. It appears, then, that both the French controls and the early bilingual pupils share essentially the same favorable views of Euorpean French while the Grade 4 immersion and the English control pupils appear to have less favorable views.

In summary, the results of the analysis of attitudes indicate that Grade 5 pupils, who have had some French immersion experience have morefavorable views of French Canadian and European French people than those English-speaking pupils without such experience. In addition, children with the greater amount of French immersion experience (Group 5B) seem to have more favorable attitudes toward French-speaking people than the children with less immersion experience (Group 5I). All of the English-speaking children, however, appear to have a similar favorable view of themselves and their own ethnolinguistic group.

Insert Table 4 about here

Results and Discussion: Grade 6 Pupils

Table 5 presents a summary of all test results for the Grade 6 pupils. The results and discussion that follow are based on this table.

Insert Table 5 about here

Intelligence

No significant group effect was found for the measure of nonverbal intelligence. Again, we find no evidence that either the early bilingual or Grade 4 immersion programs has any detrimental or enhancing effects on the intelligence of pupils in these programs, and it appears that both control groups, English and French, are appropriate controls at least as far as nonverbal intelligence is concerned.

French Language Skills

Significant group effects were found for all 13 measures of French language skills administered to the Grade 6 pupils. In addition, all significant group differences that were found by means of *t*-test comparisons were in the predicted direction. Thus, on any particular test Group 6F performed significantly better than Group 6B, Group 6B better than 6I, and/or Group 6I better

than 6E. All three of the above predicted differences were found for the scrambled and normal versions of the cloze test and for the objective measure of French writing form. Furthermore, Groups 6I, 6B, and 6F scored significantly higher on the normal version of the cloze test than on the scrambled version, indicating that the pupils in these groups were able to use the discourse information present in the normal cloze version to fill in the missing words. In contrast, there was no significant increase in performance on the normal over the scrambled cloze versions for Group 6E.

The vocabulary and listening comprehension tests were the only measures on which Group 6I did not perform significantly better than Group 6E. However, Group 6F did perform better than Group 6B and Group 6B better than Group 6I on this test. On the reading comprehension test and on both the form and content ratings of writing skills, all predicted differences were significant, except that Group 6F did not perform better on these measures than Group 6B. On the objective content measure of French writing skills, Group 6I scored significantly better than Group 6E but there were no significant differences between Groups 6F and 6B or between Groups 6B and 6I. Finally, on all five measures of French speaking skills, Group 6F was rated significantly higher than Group 6B and Group 6B was rated higher than Group 6I. The French speaking skills of Group 6E were not evaluated.

In comparing the early bilingual pilot group at Grade 6 with themselves at the end of Grade 5, we find that at the end of Grade 5 they scored significantly lower on the test of reading comprehension than the French control group and no different from the Grade 4 immersion pilot group. At the end of Grade 6, however, the early bilingual pilot group performed as well as the French control group on this test and significantly higher than the Grade 4 immersion pilot group at the Grade 6 level. The early bilingual pilot group also caught up to the French controls over this time period on the rating of writing form and pulled away from the Grade 4 immersion pilot group on the objective measure of writing content and the grammar, vocabulary, and communication ratings of French speaking skills. It appears, then, that this group advanced more rapidly during Grade 6 in French-language competence than either the Grade 4 immersion pilot group or the French controls. The Grade 4 immersion pilot group scored significantly higher than the English controls on the reading comprehension and cloze tests both at the end of Grade 5 and 6, suggesting that they had retained their edge in French-language reading skills even two years after their one year of French immersion experience.

Insert Table 6 about here

Developmental Analyses

The results of the developmental analyses of the pilot groups' performance on the French reading comprehension, cloze, and listening comprehension tests are summarized in Table 6. The analysis of the reading comprehension test results showed that all groups tested (Groups 6I, 6B, and 6F) performed significantly better on this test in 1977 than in 1975. However, there were no significant group differences for either the 1975 or 1977 results of this test.[5]

On the cloze test, Group 6F scored significantly higher than Group 6B and Group 6B higher than 6I on both the 1975 and 1977 administrations of this test. Furthermore, all three groups tested scored significantly higher in 1977 than in 1975 on this test.[6]

Finally, while Group 6F scored significantly higher than Group 6B and Group 6B higher than 6I on both the 1975 and 1977 administrations of the listen comprehension test, Group 6I did not score significantly higher than Group 6E on either administration of this test. In addition, there was no evidence that any group scored significantly higher on this test in 1977 than in 1975.[7]

These results indicate that Groups 6I, 6B and 6F all seem to have progressed at approximately the same rate in their acquisition of French language skills, and this is so in the case where all groups scored at the same level at the end of Grade 4 (reading

comprehension test) and in the case where the groups were at quite different levels as of Grade 4 (cloze test). It is not clear, however, why Groups 6E, 6I, and 6B did not show any significant improvement on the listening comprehension test scores at the end of Grade 6 compared to their scores at the end of Grade 4. Although Group 6F also did not show significant improvement from Grade 4 to 6, this may merely mean that the test was much too easy for them, since pupils received very close to perfect scores on both administrations of the listening comprehension test.

Attitudes Toward Selected Ethnolinguistic Groups

A summary of the Grade 6 pupils' views of self, English-Canadian, and European French is given in Table 7. With regard to self ratings, there was only one significant group difference — the English controls rated themselves as significantly stronger than did Group 6I. In general, all four groups have similarly favorable views of themselves.

On the ratings of English Canadians, significant differences were found for five of the 13 traits. The French controls rate-English Canadians as less intelligent, less strong and less good-looking than did Groups 6E and 6I. The French controls also rated English Canadians as less pleasant than did Group 6I. It is interesting that on these five traits the ratings of the early bilingual group (Group 6B) did not differ significantly either from the very favorable ratings of Groups 6E and 6I or the more negative ratings of the French controls; in each case, they fall between these two extremes.

Significant differences were found for 12 of the 13 traits on the ratings of French Canadians. The French controls rated French Canadians more favorably than did one or more of the English-speaking groups on all traits except "talkative - nontalkative" in which case there was no significant difference. Among the English-speaking groups, the English controls rated French Canadians as significantly less affectionate and less proud than did the early immersion group and less intelligent, less strong, less friendly, less industrious, less kind, less happy, less self-confident, less good-looking, and less pleasant than did either the early bilingual or the Grade 4 immersion groups. These results plus the fact that the early bilingual group differed significantly from the French controls on only two traits (friendly and good-looking) while the Grade 4 immersion group and English controls differed significantly from the French controls on six and 11 of the traits, respectively, suggest that English-speaking pupils in French immersion programs have more favorable attitudes toward French Canadians than do English-speaking pupils without this experience, and the longer the immersion experience, the more favorable the attitudes.

Significant group differences were found on five of the ratings of European French people. The English controls rated the European French as less friendly than did the early bilingual group, less kind than did the French controls, less industrious than did either the early bilingual or the French control groups,

and less intelligent and less strong than did the Grade 4 immersion, early bilingual, or the French control groups. There were no significant differences among these latter three groups on their ratings of European French people.

Overall, it appears that for these Grade 6 English-speaking children, French immersion experience is related to favorable views of both French Canadians and European French. At the same time, the early bilingual and Grade 4 immersion pupils are no different from the English controls in their common favorable views of themselves and their own ethnolinguistic group.

Insert Table 7 about here

Summary

The results of this evaluation in conjunction with those of the two previous evaluations permit us to make a series of concluding statements about the effects of these three elementary-school alternatives for teaching French to English-speaking pupils.

1. There is no evidence that either the early bilingual or Grade 4 French immersion program has had any adverse effects on the native-language development, academic achievement, or intelligence of children in these programs. Although in the first evaluation we found that the rate of growth of English vocabulary for children in the Grade 4 immersion program lagged behind that of children in the conventional English program during Grade 4, the

results of the second evaluation suggest that this was a temporary effect since by the end of Grade 5 these children had as good a knowledge of English vocabulary as those who had followed a conventional English language program from Kindergarten on.

2. Although the Grade 4 immersion program has shown itself to be effective in fostering the development of French-language skills, it is not clear whether these skills are maintained after the child returns to a program that puts relatively little emphasis on French-language instruction. Children in the Grade 4 immersion pilot group seem to have retained their edge in French-language skills through the end of Grade 6, even though they had received no special French instruction at all during Grade 6. In contrast, it appears that children in the Grade 4 French immersion follow-up group have by the end of Grade 5 lost most of the advanced French-language skills they had demonstrated at the end of their Grade 4 immersion year. We can not determine what program, teacher, or other classroom variables may have contributed to these differences between pilot and follow-up groups, although it seems clear that a more intensive follow-up program to the Grade 4 immersion program is necessary to ensure a maintenance of high-level French-language skills and to ensure their development throughout the elementary school years.

3. The early bilingual program, starting at Kindergarten, apparently has a deeper impact on the French-language skills of English-speaking children by Grades 4, 5, and 6 than the immersion

program starting at Grade 4. This difference manifests itself in all areas of French-language skills (reading, writing, listening comprehension, and speaking). Early immersion also appears to have a deeper and more favorable effect on pupils' attitudes toward French-speaking people (see paragraph 5 below).

4. The results of the two previous evaluations indicate that the order in which languages are introduced for learning to read has little or no effect on the development of reading skills. Our findings indicate that reading skills developed through the use of one language are transferred to the language subsequently introduced, regardless of which language is first used for reading.

5. The present evaluation has given us additional evidence indicating that in addition to being a very effective and "painless" way of developing French-language skills, both the early bilingual and Grade 4 immersion programs appear to have had a positive effect on the social attitudes of children enrolled in these programs. Although other uncontrolled factors may have contributed to these findings (e.g., selection variables and parental attitudes) the fact that the children in immersion programs have developed favorable attitudes to both major Canadian ethnolinguistic groups while maintaining positive self-views is certainly encouraging.

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FOOTNOTES

[1] This research was supported by a grant from the Quebec Ministry of Education to the South Shore Protestant School Board.

[2] For the reading comprehension test there was no significant main effect of group or year. Since the group by year interaction was significant, however, the simple main effect of group for each of the two years (1976 and 1977) and the simple main effect of year for each of the three groups (5I, 5B, and 5F) were investigated. There were no significant simple main effects of group for either year 1976 or 1977. There was also no significant simple main effect of year for Group 5I although these effects were significant for both Groups 5B and 5F.

[3] Significant main effects of group and year and a significant group by year interaction were found for the cloze test. Investigating the simple main effects of both group and year revealed that the simple main effect of group was significant for both years 1976 and 1977. In addition, the simple main effects of year were significant for all four groups indicating that all groups performed significantly better on the cloze test in 1977 compared to 1976.

[4] For the test of listening comprehension, significant main effects of group and year and a significant group by year interaction was found. The simple main effect of group was also significant at both years 1976 and 1977.

[5] For the test of reading comprehension, the main effect of time was significant but neither the main effect of group nor the group by time interaction was significant.

[6] The main effects of both group and time were significant but the group by time interaction was not significant for the cloze test.

[7] For the listening comprehension test, the main effect of group was significant but neither the main effect of time nor the group by time interaction was significant.

Table 1

Use of French in the Elementary School Programs

of the Eight Groups of Children Tested

Grade	Group 5E & 6E (English Controls)	5I & 6I (Grade 4 French Immersion)	5B & 6B (Early Bilingual)	5F & 6F (French Controls)
1	FSL (45)	FSL (45)	All subjects	All subjects except ESL (30)
2	"	"	All Subjects except ELA (60)	"
3	"	"	All subjects except ELA (70)	"
4	"	All subjects except ELA (35)	All subjects except ELA (85)	"
5	"	FSL (45) Math or Science (50)	FSL (50) Math (50)	All subjects except ESL (45)
6[a]	"	FSL (40)	"	"

Note. French-as-a-second-language, English language arts, and English-as-a-second language abbreviated as FSL, ESL, and ELA, respectively. Numbers in parentneses indicate approximate minutes of instruction per day.

[a]For Groups 6E, 6I, 6B, and 6F only.

Table 2

Grade 5 Test Results: Mean Scores

Test	Group 5E	5I	5B	5F	df	F
Raven's Progressive Matrices	27.1	25.7	27.2	25.5	3,125	.82
Vocabulary	9.8	11.9	15.6	23.4	3,123	27.68*
Reading comprehension	12.1	14.4	15.4	17.0	3,125	7.43*
Cloze	5.4	7.2	14.3	22.7	3,124	114.55*
Listening comprehension	9.1	9.4	14.4	15.5	3,124	44.36*
Writing skills						
Form errors	1.32	1.16	.91	.66	3,120	46.48*
Form rating	3.68	4.18	5.83	7.43	3,120	40.75*
Content events	6.11	6.77	7.61	9.27	3,120	11.10*
Content rating	3.47	3.82	5.47	7.30	3,120	43.37*
Speaking skills						
Comprehension	5.42	5.63	7.05	8.25	3,67	15.38*
Pronunciation	4.67	4.81	6.32	8.00	3,67	31.41*
Grammar	3.83	4.38	5.53	7.79	3,67	41.61*
Vocabulary	3.58	3.63	5.32	7.71	3,67	37.50*
Communication	3.92	3.81	5.47	6.13	3,67	10.00*

Note. Means connected by a line differ significantly ($p < .05$) according to a t-test.

*$p < .01$

Table 3

Grade 5 Developmental Analysis: 1976 and 1977 Mean Scores

Test	Group				F-ratios[a]		
	5E	5I	5B	5F	Group	Time	Interaction
Reading comprehension							
1976	-	13.2	13.5	13.2			
			|	|	2.05	.13	7.28*
1977	-	13.4	15.4	16.0	(2,53)	(1,53)	(2,53
Cloze							
1976	2.73 —	4.43 —	7.76 —	16.27			
	|	|	|	|	67.66*	79.45*	6.15*
1977	5.36	6.71 —	14.71 —	23.18	(3,60)	(1,60)	(3,60)
Listening comprehension							
1976	5.08 —	7.31	6.42 —	12.59			
	|		|	|	45.46*	111.09*	14.10*
1977	8.85	8.94 —	14.84	15.82	(3,66)	(1,66)	(3,66)

Note: Means connected by a horizontal line differ significantly ($p < .05$) according to a t-test. Vertical lines between means indicate a significant improvement in performance from 1976 to 1977.

[a]Degrees of freedom for each F-ratio are indicated within parentheses.

*$p < .01$

Table 4

Grade 5 Mean Attitude Ratings

Trait	Concept: Myself 5E	Myself 5I	Myself 5B	Myself 5F	English Canadians 5E	English Canadians 5I	English Canadians 5B	English Canadians 5F
Intelligent - stupid	6.00	5.48	5.81	5.40	6.19	5.68	5.78	4.27
Strong - weak	5.90	5.38	5.67	5.33	5.95	5.38	5.64	4.40
Friendly - unfriendly	6.29	6.28	6.31	5.93	6.29	5.73	6.03	4.93
Affectionate - unaffectionate	5.48	4.80	5.53	5.80	5.71	4.85	5.22	4.73
Industrious - lazy	5.10	4.85	5.11	5.27	5.95	4.58	4.81	5.47
Kind - mean	5.75	5.93	5.97	5.80	6.00	5.18	5.64	5.00
Happy - sad	6.52	5.93	6.60	6.60	6.00	5.45	5.50	5.40
Proud - humble	5.62	5.05	4.78	5.67	5.24	5.03	4.81	5.40
Self-confident - lacks self-confidence	5.29	5.18	5.64	4.93	5.95	4.83	4.81	5.00
Good-looking - ugly	5.81	5.18	5.47	5.07	5.95	5.38	5.50	4.27
Pleasant - unpleasant	6.10	5.58	5.78	5.87	6.19	5.20	5.44	5.00
Calm - emotional	4.48	4.00	4.92	5.20	5.48	4.55	4.39	3.80
Talkative - nontalkative	5.00	4.83	4.58	3.33	4.67	5.08	4.89	5.53

Table 4 (cont'd)

	Concept							
	French Canadian				European French			
Trait	5E	5I	5B	5F	5E	5I	5B	5F
Intelligent - stupid	3.14	3.70	4.83	4.40	3.33	4.18	4.67	5.33
Strong - weak	4.38	4.43	4.53	5.27	3.67	4.20	4.56	4.87
Friendly - unfriendly	4.05	4.10	5.19	5.33	4.05	5.00	5.11	6.00
Affectionate - unaffectionate	3.81	4.18	4.44	5.47	3.71	4.65	5.06	5.87
Industrious - lazy	3.33	3.45	4.33	4.53	3.14	4.45	4.11	5.60
Kind - mean	3.76	3.50	4.58	5.40	4.19	5.13	4.83	5.73
Happy - sad	4.81	5.03	5.42	5.67	4.29	5.48	5.36	5.73
Proud - humble	4.62	5.00	4.97	5.67	3.81	4.25	4.86	5.53
Self-confident - lacks self-confience	4.33	4.48	4.53	4.73	4.90	4.20	4.64	5.80
Good-looking - ugly	3.33	3.75	4.31	5.27	3.19	4.15	4.47	5.13
Pleasant - unpleasant	3.67	3.65	4.67	5.00	3.90	5.00	4.92	5.47
Calm - emotional	3.48	3.75	3.92	4.53	4.05	3.98	4.06	4.67
Talkative - nontalkative	5.95	5.73	5.25	4.13	6.19	5.45	5.08	4.47

Note: Means connected by a line differ significantly ($p < .05$) according to the Newman-Keuls procedure.

Table 5

Grade 6 Test Results: Mean Scores

Test	Group 6E	6I	6B	6F	df	F
Raven's Progressive Matrices	27.5	29.6	28.8	29.2	3,106	1.30
Vocabulary	12.7	13.4	21.2	29.2	3,102	37.29*
Reading comprehension	10.3	13.9	15.8	15.8	3,104	32.61*
Cloze						
Scrambled	3.55	6.00	12.36	15.82	See	Note
Normal	4.09	7.38	14.12	18.59		
Listening comprehension	8.8	10.0	15.2	16.5	3,104	87.37*
Writing Skills						
Form errors	1.32	1.15	.87	.71	3,101	44.44*
Form rating	3.30	5.25	6.82	7.22	3,101	28.54*
Content events	6.30	9.00	8.55	8.38	3,101	4.46*
Content rating	2.95	4.75	6.58	6.86	3,101	29.63*
Speaking skills						
Comprehension	-	5.64	7.00	8.42	2,40	15.47*
Pronunciation	-	4.45	5.70	8.00	2,40	29.87*
Grammar	-	3.91	5.45	7.45	2,39	30.48*
Vocabulary	-	3.82	5.35	7.42	2,40	36.78*
Communication	-	3.82	5.25	6.42	2,40	11.04*

Note: Means connected by a line differ significantly ($p < .05$) according to t-test. For the cloze test, the effects of group, F (3,101) = 114.37, test version, F (1,101) = 70.37, and the group by test version interaction, F (3,101) = 6.17, were all significant ($p < .01$).

*$p < .01$

Table 6

Grade 6 Developmental Analysis: 1975 and 1977 Means Scores

Test	Group				F-ratios[a]		
	6E	6I	6B	6F	Group	Time	Interaction
Reading comprehension							
1975	-	12.1	13.8	13.7			
1977	-	14.5	16.0	15.5	2.38 (2,46)	32.12* (1,46)	.14 (2,46)
Cloze							
1975	-	6.18	10.48	15.92			
1977	-	7.82	13.84	18.15	43.08* (2,46)	26.36* (1,46)	1.37 (2,46)
Listening comprehension							
1975	8.56	9.00	13.28	16.09			
1977	8.25	9.92	14.92	16.91	68.29* (3,60)	3.96 (1,60)	1.45 (3,60)

Note: Means connected by a horizontal line differ significantly ($p < .05$) according to a t-test. Vertical lines between means indicate a significant improvement in performance from 1975 to 1977.

[a]Degrees of freedom for each F-ratio are indicated within parenthesis.

*$p < .01$

Table 7

Grade 6 Mean Attitude Ratings

	Concept							
	Myself				English Canadians			
Trait	6E	6I	6B	6F	6E	6I	6B	6F
Intelligent - stupid	5.79	5.33	5.39	5.63	5.58	5.67	4.97	4.33
Strong - weak	6.00	4.75	4.91	5.54	5.46	5.92	5.12	5.08
Friendly - unfriendly	6.17	6.25	6.15	5.75	5.96	6.08	5.36	4.71
Affectionate - unaffectionate	5.54	5.25	5.73	5.54	5.17	5.50	5.06	4.46
Industrious - lazy	4.83	4.92	5.00	5.21	4.38	5.83	5.09	4.21
Kind - mean	5.79	5.67	5.85	5.17	5.58	6.00	5.21	4.92
Happy - sad	6.33	6.33	5.91	5.54	5.71	6.17	5.18	5.00
Proud - humble	5.33	4.42	4.94	4.71	4.96	5.75	5.06	4.54
Self-confident - lacks self-confidence	5.00	5.67	5.24	5.04	5.13	4.83	5.09	5.17
Good-looking - ugly	5.42	4.50	4.91	4.67	5.54	5.50	4.97	4.04
Pleasant - unpleasant	5.50	5.75	5.48	4.75	5.83	6.25	5.45	4.75
Calm - emotional	4.38	4.58	4.27	3.83	4.21	4.92	4.94	3.92
Talkative - nontalkative	4.96	4.33	5.15	3.88	5.04	5.17	4.70	4.58

Table 7 (cont'd)

Trait	Concept							
	French Canadians				European French			
	6E	6I	6B	6F	6E	6I	6B	6F
Intelligent - stupid	2.63	4.25	4.18	5.17	2.83	4.42	4.55	4.38
Strong - weak	2.75	4.42	4.36	5.29	3.21	4.83	4.39	4.42
Friendly - unfriendly	2.29	4.42	4.73	5.75	4.08	5.17	5.39	5.25
Affectionate - unaffectionate	3.17	3.92	4.85	.529	4.04	4.50	4.64	5.25
Industrious - lazy	2.46	4.42	4.27	4.75	3.46	4.25	5.00	5.33
Kind - mean	2.92	4.92	4.27	5.38	4.08	4.58	5.00	5.63
Happy - sad	3.54	4.92	5.15	5.92	4.13	5.00	4.97	5.33
Proud - humble	3.42	4.00	5.03	4.63	4.21	4.42	4.73	5.08
Self-confident - lacks self-confidence	2.88	4.25	4.85	5.71	4.17	4.58	4.55	5.17
Good-looking - ugly	2.67	3.92	4.30	5.46	3.29	4.17	4.06	4.63
Pleasant - unpleasant	2.38	4.08	4.58	5.50	3.83	4.50	4.88	5.13
Calm - emotional	2.33	2.42	3.24	4.38	3.88	4.00	3.85	4.21
Talkative - nontalkative	6.46	6.33	5.91	4.83	5.25	5.83	5.00	5.13

Note: Means connected by a solid line differ significantly ($p < .05$) according to the Newman-Keuls procedure.